

REMARKS

Applicants' attorney thanks the Examiner for her comments, and her thoughtful analysis of the prior art. Claim 1 has been amended as suggested by the Examiner to recite the step of "differentially shrinking the first and second layers." Amended Claim 1 also recites that the fibrous nonwoven web and film are thermoplastic (see definitions, pp. 7-9). Claims 44 and 45 have been canceled.

a) Claim Rejections Based On 35 U.S.C. §112

The Examiner rejected Claims 44-45 under 35 U.S.C. §112, first paragraph, as failing to comply with the written description requirement. This rejection is moot due to the cancellation of Claims 44-45.

The Examiner rejected Claims 1-2, 4-6, 11-17, 19-20 and 42-45 under 35 U.S.C. §112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the invention. To overcome this rejection, the Examiner suggested amending Claim 1 to recite the step of "differentially shrinking the first and second layers." Applicants amended Claim 1 according to the Examiner's helpful suggestion, thereby overcoming this rejection.

The Examiner asked whether or not the differential shrinkage requires shrinking both layers. Various embodiments of differentially shrinking the layers are described on pages 23-26 of Applicants' specification. As explained, the differential shrinkage of the layers may be accomplished by shrinking either layer relative to the other, i.e., to a greater extent than the other. The process described may, in some instances, shrink both layers, with one layer shrinking to a greater extent than the other. However, it is not essential to shrink both layers to accomplish the differential shrinkage.

For example, if a laminate is heated to a temperature higher than the shrinking point of one layer but below the shrinking point of the other layer, only one

of the layers may shrink. While Claim 1 requires that both layers have a shrinkage extent (defined on page 11 as shrinkage attainable at an activation temperature), it does not require heating the layers to a temperature where both of the layers are caused to shrink.

Not all nonwoven webs and films have a shrinkage extent. Often, a shrinkage extent is imparted by stretching and/or orienting a material in a molten or semi-molten state and allowing it to cool and set at the controlled length. When the material is subsequently heated, it retracts or “shrinks” toward its original dimension. Processes for imparting a shrinkage extent are described on page 20, first paragraph and pages 22-23 of the specification. While the selection of a particular polymer may determine or influence the shrinking point (activation temperature) of a material, the existence and amount of shrinkage extent depend more on how the material was formed and processed.

If the Examiner has any further questions or suggestions regarding the claim language, please telephone the undersigned at (847) 490-1400.

b) Claim Rejections Based On 35 U.S.C. §103(a)

The Examiner rejected Claims 1-2, 4-6, 11-15, 17, 19-20 and 42-45 under 35 U.S.C. §103(a) as obvious over Breveteam (GB 1 293 456) in view of Kasai et al. (U.S. 6,503,431). This rejection is respectfully traversed.

Independent Claim 1 requires that one of the layers comprises a fibrous nonwoven web and another of the layers comprises a film. Both layers have a shrinkage extent.

The terms “nonwoven web” and “film” are defined on p. 7 of Applicants’ specification. A nonwoven web is a web have a structure of individual fibers or threads which are interlaid, but not in an identifiable manner. A film is a thermoplastic film made using a film extrusion and/or forming process, such as a cast

film or a blown film coextrusion process. The terms are mutually exclusive, and do not overlap. For instance, a film does not have a structure of individual fibers or threads.

Independent Claim 1 further requires that the second layer (comprising the film) is extruded onto the first layer (comprising the fibrous nonwoven web).

Breveteam discloses a laminate of two materials which appear to have differential shrinkage properties (p. 2, lines 87-114). A shrinkable base sheet is initially formed, which is nonfibrous and may be a thermoplastic film (p. 1, lines 24-50). A less shrinkable material such as paper may be applied to the base sheet. Then, a hot melt adhesive film may be applied to the shrinkable base sheet (p. 2, lines 87-114).

Breveteam does not disclose the limitations of Applicants' Claim 1. The disclosed paper layer is not a thermoplastic film, and is not a thermoplastic fibrous nonwoven web. The paper layer does not satisfy the limitations of either of Applicants' layers.

The disclosed hot melt adhesive film is extruded onto the base layer, which is a non-fibrous material (p. 1, lines 32-35). The film is not extruded onto a fibrous thermoplastic nonwoven layer as required by Claim 1. Furthermore, the disclosed hot melt adhesive film apparently does not have a second shrinkage extent different from a first shrinkage extent (of a first layer) as required by Claim 1. The hot melt adhesive film melts below the shrinking temperature of the shrinkable sheet, and shrinks along with the shrinkable sheet (p. 3, lines 105-115). The shrinkable sheet merely carries the hot melt adhesive, and there is no apparent differential shrinkage of these two layers. To the contrary, the hot melt adhesive, when heated, causes the composite to have an adhesive surface (p. 3, lines 112-114). If the hot melt adhesive shrank independently at a lower temperature than the shrinkable film, then the adhesive surface would become concave and have diminished use for bonding.

The Examiner cited Kasai et al. as disclosing extrusion of a polyethylene film onto a paper web. Again, a paper web is not a thermoplastic fibrous web. Furthermore, the laminate produced by Kasai et al. is used for packaging, printing paper, photographic paper, and the like (Col. 1, lines 13-23). Curling of the laminate caused by shrinkage of either layer would be disadvantageous for these applications. Therefore, it is reasonable to interpret Kasai et al. as not disclosing shrinkable layers, or layers which exhibit differential shrinkage relative to each other.

In summary, the combined references do not disclose or suggest the limitations of Applicants' Claim 1. The remaining claims depend from Claim 1, and are patentable for at least the same reasons. Furthermore, the references teach away from one another, and there is no suggestion to combine them. If the non-shrinkable layers in Kasai et al. were substituted for the shrinkable layers in Breveteam, then Breveteam would be rendered inoperable for its stated purposes. Conversely, if shrinkable materials in Breveteam were substituted for the layers in Kasai et al., then Kasai et al. would be inoperable for its purposes.

Applicants believe that the claims are in condition for allowance. Again, please telephone the undersigned if any issue has not been resolved.

Respectfully submitted,



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